

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Kethinni G. Chittibabu et al.  
Serial No. : Not yet assigned  
Filed : April 21, 2004  
Title : PHOTOVOLTAIC CELL

Art Unit : Unknown  
Examiner : Unknown

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO-1449.

This application relies on the earlier filing date of U.S. application serial number 10/165,877, filed on June 10, 2002, which claims priority to U.S. provisional application serial number 60/298,858, filed on June 15, 2001. The references listed on the following 1449 forms were submitted to and/or cited by the Office in the prior non-provisional application and, therefore, are not provided in this application.

This statement is being filed with the application. Accordingly, only copies of foreign patent documents and non-patent literature are enclosed. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: April 21, 2004

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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 08688-048002	Application No.
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)		Applicant Kethinni G. Chittibabu et al.	
(37 CFR §1.98(b))		Filing Date April 21, 2004	Group Art Unit

**U.S. Patent Documents**

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	4,232,108	11/04/80	Dessauer			
	AB	4,295,329	10/20/81	Windley			
	AC	4,927,721	05/22/90	Gratzel et al.			
	AD	5,728,487	03/17/98	Gratzel et al.			
	AE	5,830,597	11/3/1997	Hoffmann et al.			
	AF	6,075,203	06/13/00	Wang et al.			
	AG	6,291,763 B1	9/18/2001	Nakamura			
	AH	6,444,189	09/03/02	Wang et al.			
	AI	2002/0042343	04/11/02	Akui et al.			
	AJ	2003/0140959	7/2003	Gaudiana et al.			
	AK	2003/0188777	10/2003	Gaudiana et al.			
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	AM	2003/0192584	10/2003	Beckenbaugh et al.			
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	AP	2003/0025933	2/2004	Chittibabu et al.			
	AQ	2004/0025934	2/2004	Chittibabu et al.			
	AR	2004/0031520	2/2004	Ryan			

**Foreign Patent Documents or Published Foreign Patent Applications**

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AS	JP 7-116503	5/9/1995	Japan				
	AT	EP 993050	4/12/2000	EPO				

**Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
	AU	Cao et al, "A Solid State, Dye Sensitized Photoelectrochemical Cell," J. Phys. Chem., vol. 99, pages 17071-17073, (1995).

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	
Substitute Disclosure Form (PTO-1449)	

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### **Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
	AV	Bach et al., "Solid-state dye-sensitized mesoporous TiO <sub>2</sub> solar cells with high photon-to-electron conversion efficiencies", <i>Nature</i> , Volume 395, pp. 583-585, October 1998.
	AW	Carotta et al., "Preparation and Characterization of Nanostructured Titania Thick Films", <i>Advanced Materials</i> , Volume 11, No. 11, pp. 943-946, 1999.
	AX	Gomez et al., "Nanocrystalline Ti-oxide-based solar cells made by sputter deposition and dye sensitization: Efficiency versus film thickness", <i>Solar Energy Materials &amp; Solar Cells</i> , Volume 62, pp. 259-263, 2000.
	AY	Green, M.A., "Photovoltaics: technology overview", <i>Energy Policy</i> , Volume 28, pp. 989-998, 2000.
	AZ	Gregg, Brian A., "Bilayer molecular solar cells on spin-coated TiO <sub>2</sub> substrates", <i>Chemical Physics Letters</i> , Volume 258, pp. 376-380, 1996.
	AAA	Hagfeldt et al., "Molecular Photovoltaics", <i>Accounts of Chemical Research</i> , Volume 33, pp. 269-277, 2000.
	ABB	Li et al., "Titanium dioxide films for photovoltaic cells derived from a sol-gel process", <i>Solar Energy Materials and Solar Cells</i> , Volume 56, pp. 167-174, 1999.
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	ADD	Nasr et al., "Role of Iodide in Photoelectrochemical Solar Cells. Electron Transfer between Iodide Ions and Ruthenium Polypyridyl Complex Anchored on Nanocrystalline SiO <sub>2</sub> and SnO <sub>2</sub> Films", <i>J. Phys. Chem. B</i> , Volume 102, pp. 4944-4951, 1998.
	AEE	O'Regan et al., "A low-cost, high-efficiency solar cell based on dye-sensitized colloidal TiO <sub>2</sub> films", <i>Nature</i> , Volume 353, pp. 737-740, October 1991.
	AFF	Park et al., "Comparison of Dye-Sensitized Rutile- and Anatase-Based TiO <sub>2</sub> Solar Cells", <i>J. Phys. Chem. B</i> , Volume 104, pp. 8989-8994, 2000.
	AGG	Petritsch et al., "Dye-based donor/acceptor solar cells", <i>Solar Energy Materials &amp; Solar Cells</i> , Volume 61, pp. 63-72, 2000.
	AHH	Phani et al., "Titania solar cells: new photovoltaic technology", <i>Renewable Energy</i> , Volume 22, pp. 303-309, 2001.
	AII	Pichot et al., "Low-Temperature Sintering of TiO <sub>2</sub> Colloids: Application to Flexible Dye-Sensitized Solar Cells", <i>Langmuir</i> , Volume 16, pp. 5626-5630, 2000.
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	ALL	Schwarzburg et al., "Origin of Photovoltage and Photocurrent in the Nanoporous Dye-Sensitized Electrochemical Solar Cell", <i>J. Phys. Chem. B.</i> , Volume 103, Number 28, pp. 5743-5746, 1999.
	AMM	Smestad, Greg P., "Education and solar conversion: Demonstrating electron transfer", <i>Solar Energy Materials and Solar Cells</i> , Volume 55, pp. 157-178, 1998.
	ANN	Sommeling et al., "Flexible Dye-Sensitized Nanocrystalline TiO <sub>2</sub> Solar Cells", Conference Organizers, 5 pages.
	AOO	Trupke et al., "Dependence of the Photocurrent Conversion Efficiency of Dye-Sensitized Solar Cells on the Incident Light Intensity", <i>J. Phys. Chem. B</i> , Volume 104, pp. 11484-11488, 2000.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	